

**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
AUSTIN DIVISION**

FLASH-CONTROL, LLC,

Plaintiff,

v.

INTEL CORPORATION,

Defendant.

Civil Action No. 1:19-cv-01107

JURY TRIAL DEMANDED

**DEFENDANT INTEL CORPORATION'S MOTION FOR SUMMARY JUDGMENT
AND OPENING CLAIM CONSTRUCTION BRIEF**

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I. INTRODUCTION¹

The fundamental bargain underlying the patent system is that a patentee must *describe* and *define* his or her claimed invention for the public in exchange for a patent monopoly. Where a patentee fails to hold up their end of this bargain the consequence is clear as a matter of law: the patent is invalid.

Although the bargain requires that a patentee provide an adequate disclosure in all cases, the bargain is especially important where the resulting claims are disconnected from the original invention because the disclosure requirement serves as a check to “to prevent an applicant from later asserting that he invented that which he did not.” *Quake v. Lo*, 928 F.3d 1365, 1373 (Fed. Cir. 2019).² Here, the asserted claims of the two patents-in-suit were drafted five years—and multiple intervening patent applications and claims—after the specification disclosing the purported invention was drafted. The law allows amended patent claims that follow months or years after a patent specification is originally prepared. But it does not allow patent claims that seek to expand the scope of the patent monopoly beyond what the patentee purportedly invented and disclosed. Indeed, precisely “[t]o guard against the inventor’s overreaching, the written

¹ To improve efficiencies for the Court, Intel seeks to present intertwined issues of the asserted patents’ failure to comply with Section 112 together. Intel’s motion for summary judgment moves the Court to find that U.S. Patent No. 8,531,880 (the “880 patent”) and U.S. Patent No. 8,817,537 (the “537 patent”) invalid as lacking sufficient written description under Section 112; Intel’s claim construction briefing moves the Court to find that claim 1 of U.S. Patent No. 8,531,880 invalid as indefinite under the same statutory scheme. Prior to the filing of this brief, Intel provided Flash-Control notice of Intel’s intent to file the present motion for summary judgment and proposed aligning the briefing schedule for Intel’s motion with the Markman briefing schedule. If and when the issue arises, Intel will work with Flash-Control and the Court to determine how the pages in this brief will be counted with regard to the Court’s claim construction and motion for summary judgment page limits. *See* Dkt. 30-1 at 4, 5.

² Internal citations and quotations omitted and emphasis supplied throughout, unless otherwise noted.

description requirement insists that the inventor recount his invention in such detail that his future claims can be determined to be encompassed within his original creation.” *TracBeam L.L.C. v. AT&T Inc.*, No. 6:11-CV-96, 2013 WL 6175372, at *2 (E.D. Tex. Nov. 25, 2013) (quoting *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1561 (Fed. Cir. 1991)). In this case, the multi-year and multi-patent gap between disclosure and claims has created a complete mismatch between the specification drafted to originally define and describe the purported invention and the claims later crafted to try to expand and extend patent coverage. The specification lacks corresponding disclosure for multiple claimed limitations related to the core of the asserted claims: moving and modifying a portion of a page in memory. While the specification was drafted to describe the purported invention of utilizing non-volatile memory as additional SRAM such that pages can be moved between blocks on the fly, the asserted claims were later crafted to capture modifying a portion of a page on volatile memory. Simply put, the description does not describe what the claims claim. And that fundamental failing is fatal to each and every asserted claim.

Although the Court need not reach the issue if it finds the patents invalid for failure to comply with the written description requirement, the defects in the patent disclosure do not end there. Just as the patents fail to describe what they claim, claim 1 of the '880 patent also fails to define its scope with the particularity required under Section 112. Although the claim contemplates that data should be transferred from the claimed volatile memory to the first buffer, it is missing a key claim limitation that would inform a person of skill in the art with reasonable certainty as to *how* that data is updated. Without that information, it is not possible to determine what is and is not covered by the claim. And without a definite claim to a particular scope, the claim fails to define the purported invention for the public.

II. BACKGROUND

Dr. Rao filed a provisional patent on October 24, 2007 relating to modifying existing buffers in non-volatile memory systems to “enhance [their] random access performance.” Declaration of Joseph Taylor Gooch (“Gooch Decl.”) Ex. 1, U.S. Patent No. 7,855,916 at 1:59–62. As is described in more detail below, there are four patents that claim priority to this application: one non-provisional patent and three continuation patents. The first two patents (U.S. Patent No. 7,855,916 (“’916 patent”) and U.S. Patent No. 8,194,452 (“’452 patent”) (together referred to as the “non-asserted family member patents”)) claim systems for randomly accessing and moving pages within a non-volatile memory block are *not at issue in this case*. Gooch Decl. at Ex. 2, ’452 patent. The latter two are asserted in this case. The asserted patents claim an unrelated method of modifying a portion of a page stored in non-volatile memory. The ’880 patent was filed in 2012, and the ’537 patent was filed one and a half years later.

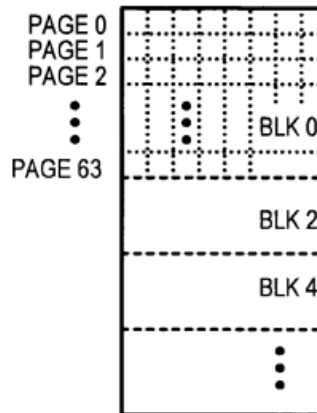
A. Non-Volatile And Volatile Memory

Non-volatile memory is a type of computer memory that can hold data when not powered. Volatile memory, such as SRAM or DRAM, is a type of computer memory that is unable to store data when not powered. Non-volatile memory includes conventional long term storage such as hard drives and CDs, and also includes newer, solid-state “flash” memory such as NAND flash memory or NOR flash memory.³ Unlike volatile solid-state SRAM and DRAM, which are used while a computer is powered on to facilitate operations but cannot be used unpowered or for long term storage, non-volatile flash memory can be used as long term storage media so that the computer can store information when it is powered off. Declaration of Carl

³ The term “flash memory” will be used in this brief to refer generally to both NAND flash memory and NOR flash memory.

Sechen, Ph.D. (“Sechen Decl.”) ¶¶ 15–17.

Flash memory organizes the data it stores in a hierarchy of blocks and pages. Sechen Decl. ¶ 18. As illustrated below, each non-volatile memory is composed of multiple blocks that are in turn composed of multiple pages:



For example, block 0 (“BLK 0”) is composed of sixty-four pages (“Page 0” to “Page 63”). Gooch Decl. at Ex. 3, U.S. Patent Application No. 2008/0034153 at Fig. 10. The patent describes that a particular non-volatile NAND flash may have a total of 1,024 blocks. ’880 patent at 2:29–33; ’537 patent at 2:34–37. Each block is then composed of 64 pages, wherein each page contains 1kB of individual memory cells.

Various technological limitations dictate how flash memory is used. For example, before information can be written to a page of flash memory, that entire block containing that page must be erased. Additionally, the smallest addressable amount of information that can be read out at a single time is a page. Conversely, most types of volatile memory (and traditional magnetic hard drives) do not have to be erased before writing and can typically be read and written in units smaller than a page. Because of these fundamental differences, many modern flash memory systems rely on volatile memory (e.g., SRAM) in combination with the non-volatile flash to increase efficiency and speed. Where additional temporary storage is placed adjacent to flash

memory to help the system with copying data into and out of the memory, that temporary storage is referred to as a “buffer.” Sechen Decl. ¶¶ 17–23.

B. The Non-Asserted Family Member Patents (’916 And The ’452 Patents)

On October 22, 2008, Dr. Rao filed his first non-provisional patent application, which led to the issuance of the ’916 patent. The ’916 patent issued with a single claim for a system with both non-volatile and volatile memory, the non-volatile memory can be used to act as SRAM where one entire page can be substituted for any other entire page. ’916 patent at 5:1–6:8 (“each page of a block is adapted to be substituted on the fly for any other page of a different block through address mapping.”). This is accomplished in the claim by pairing a buffer, in this case a page buffer, with each block of flash. *Id.* (“wherein the nonvolatile memory for storage has one or more pages of stored data accessible through the coupled volatile random access memory”). This claim closely parallels the specification’s embodiment which describes how to modify a then-existing Samsung NAND flash drive such that non-volatile memory may be used as modified SRAM *Id.* at 3:15–50 (“any of the currently unused blocks and use that/those pages as modified SRAM”); Sechen Decl. ¶¶ 34–36.

Eight days after the ’916 patent was allowed, Dr. Rao filed a continuation patent application, claiming priority to both the ’916 and the provisional. Gooch Decl. at Ex. 4, USPTO Notice of Allowance and Fee(s) Due, Application No. 12/256,362 (Nov. 8, 2010); U.S. Patent No. 8,194,452 (22). The continuation patent was allowed on June 5, 2012 as the ’452 patent. Like the ’916 patent, the claims of the ’456 patent focus on a non-volatile memory module or system where the non-volatile NAND flash was coupled to volatile memory such that pages from one block can be substituted for pages on a different block through address mapping. ’452 patent at 4:65–5:12 (“each page of a block of the pool of NAND flash is adapted to be substituted on the fly for any other page of a different block of the pool of NAND flash through address

mapping.”). Sechen Decl. ¶ 37.

C. The '880 Patent

Over five years after filing the provisional patent application, Dr. Rao filed a second continuation patent that issued as the asserted '880 patent. '880 patent at (22). While all the patents in this family share the exact same specification, there is a shift in the scope of the claims of the '880 patent. In particular, the claims of the '880 patent are directed to the modification of only a portion of a page of non-volatile memory. Sechen Decl. ¶¶ 38–39.

The '880 patent claims a system involving four main components: non-volatile memory, volatile memory, a first buffer, and a second buffer. '880 patent at 4:62–5:27. The system performs five key steps when it modifies data stored on the memory in response to a write request: **First**, a page of data is read out of the non-volatile memory onto the first buffer. *Id.* at 5:7–10 (“to locate said page . . . in said non-volatile memory, and to selectively write said page to said first buffer”). **Second**, a *portion* of that page is moved from the first buffer to the volatile memory for modification. '880 patent at 5:11–17 (“to selectively write said one or more portions to said volatile memory without writing the entirety of said page”). **Third**, the data from a write request—which had been stored on the second buffer—is used to modify the portion of the page on the volatile memory. *Id.* at 5:18–20 (“to write said one or more changes from said second buffer to said volatile memory”). **Fourth**, the newly modified portion of a page in the volatile memory is written back to the first buffer, where it is recombined with the unmodified portions of the original page. *Id.* at 5:20–24 (“thereby updating said one or more updated portions from said volatile memory to said first buffer”). **Fifth**, the now modified page on the first buffer, containing both the unmodified and modified portions of a page, is written back to an erased page on the non-volatile memory. *Id.* at 5:25–27 (“to write said updated page from said first buffer to an erased page in said non-volatile memory”).

Claim 1 of the '880 patent, which is representative not only of the independent claims of the '880 patent, but also of the independent claims of the '537 patent, reads:

1. A memory system comprising:
 - a non-volatile memory organized to include a plurality of blocks each having a plurality of pages;
 - a volatile memory;
 - a first buffer capable of temporarily storing at least one page;
 - a second buffer configured to receive information associated with one or more write requests, **said write requests being associated with one or more changes to one or more portions of a page in said non-volatile memory, said one or more portions being less than the entirety of said page;**
 - said system adapted to **locate said page associated with said one or more write requests in said non-volatile memory, and to selectively write said page to said first buffer;**
 - said system further adapted to **locate in said first buffer said one or more portions of said page associated with said one or more write requests, and to selectively write said one or more portions to said volatile memory without writing the entirety of said page** in said first buffer to said volatile memory;
 - said system further adapted to **write said one or more changes from said second buffer to said volatile memory, thereby updating said one or more updated portions from said volatile memory to said first buffer,** thereby updating said page stored therein to include said one or more changes associated with said one or more write request; and
 - said system further adapted to **write said updated page from said first buffer to an erased page in said non-volatile memory.**

(emphasis added).

Despite the multiple claimed steps purporting to claim modifying a portion of a page of

non-volatile memory, there is no written description in the specification that describes the aforementioned claimed system. In fact, the patents do not even describe how to read or write a portion of a page. Instead, the specification merely states that the claimed invention involved “[n]ew commands,” including “[r]ead byte out of page” and “[w]rite byte out of a page.” ’880 patent at 4:30–36; ’537 patent at 4:31–39. The specification of both the asserted patents provide absolutely no disclosure on how to actually perform the “[n]ew commands.” *Id.* Furthermore, the embodiment that is described in the specification relate to the claim scope of the non-asserted family member patents, *i.e.* substituting entire pages on the fly between blocks of the non-volatile memory as opposed to modifying a portion of a page on volatile memory. Sechen Decl. ¶ 39.

D. The Prosecution Of Claim 1 Of The ’880 Patent

During the prosecution of claim 1 of the ’880 patent, a key limitation was omitted by the USPTO causing the claim to be nonsensical. On June 20, 2013 the patentee sent a facsimile to the USPTO amending the independent claims. Gooch Decl. at Ex. 5, Facsimile from Eugene M. Cummings to Examiner Ly D. Pham, Application No. 13/458,173 (June 20, 2013). These revisions included significant line edits to what was then claim 41 and would become claim 1 of the ’880 patent. *Id.* The relevant revisions were as follows:

said system ~~being~~ further adapted to write said ~~change~~ one or more changes from said second buffer ~~into~~ to said ~~memory location in~~ said volatile memory, thereby updating said one or more portions associated with said one or more write requests to include said one or more changes; and

said system being further adapted to write ~~at least a portion of said change, and at least a portion of said unchanged portion, said one or more updated portions~~ from said ~~memory location in said~~ volatile memory to said first buffer, thereby updating said page stored therein to include said one or more changes associated with said one or more write requests; and

Id at 2–3. However, the USPTO’s subsequent notice of allowance on June 26, 2013 omitted the phrase struck out in the following quote.

said system further adapted to write said one or more changes from said second buffer to said volatile memory, thereby updating ~~said one or more portions associated with said one or more write requests to include said one or more changes;~~

~~said system being further adapted to write thereby updating~~ said one or more updated portions from said volatile memory to said first buffer, thereby updating said page stored therein to include said one or more changes associated with said one or more write request; and

Gooch Decl. at Ex. 6, Notice of Allowance and Fee(s) Due, Application No. 13/458,173 (June 26, 2013) at 3. On July 24, 2013 the patentee sent a letter to the USPTO stating that “while the Notice correctly recites claim 41 for purposes of stating the allowable subject matter, there appears to be a number of transcription errors from the submitted claims.” Gooch Decl. at Ex. 7, Communication Pursuant to 37 CFR § 1.312, Application No. 13/458,173 (July 24, 2013) at 1. On that same day, the patentee paid the issuance fee. Gooch Decl. at Ex. 8, Part B – Fee(s) Transmittal, Application No. 13/458,173 (July 24, 2013). No other correspondence was made to the USPTO regarding errors in the aforementioned claim and no response was made by the examiner as to the differences between the revised claim submitted by the patentee and the claim ultimately allowed. The patent issued. No Certificate of Correction has been filed.

E. The ’537 Patent

Shortly after the ’880 patent was allowed, Dr. Rao filed another continuation application on August 15, 2013, which would ultimately issue as the ’537 patent at issue in this case. The claims of the ’537 patent cover largely the same scope as that of the ’880 patent, with the main exception being that the ’880 patent requires a final write to non-volatile memory and the ’537 does not. *Compare* ’880 patent at 4:62–5:27 *with* ’537 patent at 4:65–5:30.

III. LEVEL OF SKILL IN THE ART

A person of ordinary skill in the art at the time of the '880 and '537 patents were filed would have had a Bachelor's Degree in Computer Engineering or Electrical Engineering and three years' work experience in memory systems, device drivers, and memory design, or a master's degree with one year of work experience in memory systems, device drivers, and memory design; or equivalent work experience. Sechen Decl. ¶¶ 25, 33.

IV. LEGAL STANDARD

A. Summary Judgment

Summary judgment shall be granted where it is shown “that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law.” Fed. R. Civ. P. 56(a); *see also Celotex Corp. v. Catrett*, 477 U.S. 317, 322 (1986). A dispute about a material fact is genuine if “the evidence is such that a reasonable jury could return a verdict for the nonmoving party.” *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248 (1986). “By its very terms, this standard provides that the mere existence of *some* alleged factual dispute between the parties will not defeat an otherwise properly supported motion for summary judgment; the requirement is that there be no *genuine* issue of *material* fact.” *Id.* at 247–48. Once the movants demonstrate the absence of a genuine dispute over any material fact, the burden shifts to the non-movant to show there is a genuine factual issue for trial. *Celotex*, 477 U.S. at 323–24. “[M]ere conclusory allegations are not competent summary judgment evidence, and such allegations are insufficient, therefore, to defeat a motion for summary judgment.” *Eason v. Thaler*, 73 F.3d 1322, 1325 (5th Cir. 1996).

B. Section 112

Patent laws reward innovation with a temporary monopoly. *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 730 (2002). “The monopoly is a property right; and

like any property right, its boundaries should be clear. This clarity is essential to promote progress, because it enables efficient investment in innovation.” *Id.* at 731–32. As such, the “patent laws require inventors to describe their work in ‘full, clear, concise, and exact terms.’” *Id.* at 731. All claim limitations must appear in the specification. *Lockwood v. Am. Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997). Among other things, 35 U.S.C. § 112 defines these boundaries by setting forth requirements for both the patents written description and the definiteness of the claims.

1. The Written Description Requirement

“The ‘written description’ requirement implements the principle that a patent must describe the technology that is sought to be patented; the requirement serves both to satisfy the inventor’s obligation to disclose the technologic knowledge upon which the patent is based, and to demonstrate that the patentee was in possession of the invention that is claimed.” *Capon v. Eshhar*, 418 F.3d 1349, 1357 (Fed. Cir. 2005). It is for this reason, that “[t]he written description doctrine prohibits new matter from entering into claim amendments, particularly during the continuation process.” *Agilent Techs., Inc. v. Affymetrix, Inc.*, 567 F.3d 1366, 1379 (Fed. Cir. 2009). To wit, the written description serves “to prevent an applicant from later asserting that he invented that which he did not.” *Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1330 (Fed. Cir. 2003).

“The written description requirement is satisfied if the inventor conveys with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention, and demonstrates that by disclosure in the specification of the patent.” *Quake*, 928 F.3d at 1373. “The invention is, for purposes of the ‘written description’ inquiry, *whatever is now claimed*.” *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563–64 (Fed. Cir. 1991). That test “requires an objective inquiry into the four corners of the specification from the perspective of a

person of ordinary skill in the art.” *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010). Furthermore, to satisfy the written description requirement, the applicant need not exactly describe the subject matter claimed or use the same terms as used in the claims, but “the specification must contain an equivalent description of the claimed subject matter.” *Lockwood*, 107 F.3d at 1572; *see also Vas-Cath*, 935 F.2d at 1563. Particularly relevant here, “[t]o obtain the benefit of the filing date of a parent application, the claims of the later-filed application must be supported by the written description in the parent ‘in sufficient detail that one skilled in the art can clearly conclude that the inventor invented the claimed invention as of the filing date sought.’” *M-I LLC v. FPUSA, LLC*, No. 15-cv-406-DAE, 2015 WL 6738823, at *10 (W.D. Tex. Nov. 4, 2015) (quoting *Anascope, Ltd. v. Nintendo of Am. Inc.*, 601 F.3d 1333, 1335 (Fed. Cir. 2010)).

Compliance with Section 112 ¶ 1 is a question of fact. *ICU Med., Inc.*, 558 F.3d 1368, 1376 (Fed. Cir. 2009). Intel must demonstrate by clear and convincing evidence that the patent is invalid for lack of written description. *Id.*

2. The Law Of Indefiniteness

A patent claim must “particularly point[] out and distinctly claim[] the subject matter which the applicant regards as [the] invention.” 35 U.S.C. Pre-AIA § 112, ¶ 2. “The limits of a patent must be known for the protection of the patentee, the encouragement of the inventive genius of others, and the assurance that the subject of the patent will be dedicated ultimately to the public. The statute seeks to guard against unreasonable advantages to the patentee and disadvantages to others arising from uncertainty as to their rights.” *Gen. Electric Co. v. Wabash Appliance Corp.*, 304 U.S. 364, 369 (1938). In *Nautilus*, the Supreme Court explained that a “patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the

art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2124 (2014). To provide definite claims, “a patent must be precise enough to afford clear notice of what is claimed, thereby ‘apprising the public of what is still open to them.’ Otherwise there would be ‘a zone of uncertainty which enterprise and experimentation may enter only at the risk of infringement claims.’” *Id.* at 2129. (quoting *United Carbon Co. v. Binney & Smith Co.*, 317 U.S. 228, 236 (1942)). Eliminating this “zone of uncertainty” is the responsibility of the patentee: “[A]bsent a meaningful definiteness check . . . patent applicants face powerful incentives to inject ambiguity into their claims. Eliminating that temptation is in order, and ‘the patent drafter is in the best position to resolve the ambiguity in . . . patent claims.’” *Id.* (quoting *Halliburton Energy Servs., Inc. v. M-I LLC*, 514 F.3d 1244, 1255 (Fed. Cir. 2008)).

As with written description, Intel bears the burden of proving indefiniteness with clear and convincing evidence. *Nautilus*, 134 S. Ct. at 912 n.10.

V. ALL ASSERTED CLAIMS ARE INVALID AS A MATTER OF LAW FOR FAILURE TO SATISFY THE WRITTEN DESCRIPTION REQUIREMENT

As demonstrated herein, the specification of the ’880 and the ’537 patents fails to “convey[] with reasonable clarity to those skilled in the art that, as of the filing date sought, [the applicant] was in possession of the invention” for the simple reason that the patentee inappropriately added new matter during the claim amendment process. *Quake*, 928 F.3d at 1373.

The entire specification—shared by both patents—consists of only four columns of text, coupled with figures that have no accompanying detailed description. Of these four columns, only a few lines bear any connection to the claims, and critically, those few lines do not actually teach all aspects of the claims. The claims require, among other things, a system with the ability to read, write, and modify a *portion* of a page. While the specification discloses a system to

reassign certain areas in a non-volatile memory device for use as random access memory—consistent with the claims in the first two patents in this family—it makes virtually no reference to reading, writing, or modifying a portion of a page, let alone to the specific requirements of the claims.⁴ Sechen Decl. ¶¶ 42–57. There are three specific limitations relating to partial page modification that lack adequate written description.

First, the specification does not provide support for the claim limitation “a second buffer configured to receive information associated with one or more write requests, said write requests being associated with one or more changes to one or more portions of a page in said non-volatile memory, said one or more portions being less than the entirety of said page.” ’880 patent at claim 1; *see also* ’880 patent at claims 4, 6; ’537 patent at claims 1, 7, 12. There is no description—or even an illustration—of such a *second* buffer. While some figures show *one* buffer being paired with NAND, there is no figure or description that shows a *second* buffer, let alone a second buffer that can store a write request. Sechen Decl. ¶¶ 60–62 (“There is no description or illustration of such a *second* buffer anywhere in the specification.”). Nor does the specification’s embodiment support this limitation. The disclosed embodiment utilizes unused blocks in the non-volatile memory as random-access memory (e.g., SRAM). ’880 patent at 3:21–52; ’537 patent at 3:24–55. The patentee claims this is accomplished by modifying the connections of the pins of the non-volatile memory. *Id.* But, this rewiring is entirely unrelated to implementing a second buffer as described in this limitation. Sechen Decl. ¶¶ 55–57 (“As

⁴ This section applies equally to each of the independent claims of the ’880 and the ’537 patents. Each of the dependent claims in both the ’880 and the ’537 patent rise and fall together with this corresponding independent claim as they incorporate all of the limitations of the independent claims. *Stored Value Sols., Inc. v. Card Activation Techs., Inc.*, 499 F. App’x 5, 14 (Fed. Cir. 2012) (upholding the district court’s holding that dependent claims were invalid for lacking written description because the dependent claims include the same unsupported limitations as the independent claims).

discussed above in relation to the figures, a person of ordinary skill in the art would have understood that this “SRAM mode” or “modified SRAM” does not relate to the use of a second buffer, nor to the writing of a partial page to non-volatile memory.”). In fact, the embodiment makes no reference to a second buffer at all. This is because the embodiment relates only to the claim scope of the earlier, non-asserted family member patents. *Compare* ’880 patent at 3:35–36 (“[s]elect any of the currently unused blocks and use that/those pages as modified SRAM”) *with* ’452 patent at claim 1 (“each page of block of the pool of NAND flash is adapted to be substituted on the fly for any other page of a different block of the pool of NAND flash”); Sechen Decl. ¶¶ 35–37, 42–57. Nor would a person of ordinary skill in the art have understood the specification to contain an equivalent description. Sechen Decl. ¶¶ 61–62.

Second, the specification does not provide support for the claim limitation “locate in said first buffer said one or more portions of said page associated with said one or more write requests, and to selectively write said one or more portions to said volatile memory without writing the entirety of said page in said first buffer to said volatile memory.” ’880 patent at claim 1; *See also* ’880 patent at claims 4, 6; ’537 patent at claims 1, 7, 12. The specification provides no disclosure of writing a portion of a page to volatile memory. ’880 patent at 3:21–52; ’537 patent at 3:24–55. Instead, the disclosed embodiment relates only to the coupling of a buffer with each block of memory such that entire pages can be moved, which a person of ordinary skill would understand to bear no relationship to the claim requirement. Sechen Decl. ¶¶ 55, 63 (“One embodiment appears to suggest combining unused page buffers, in some non-described ways, to form a larger SRAM, and this is referred to as “SRAM mode” or “modified SRAM”). The closest the specification comes to lending support to this element is the specification’s reference to “new commands” that include “read byte out of page” and “write byte out of page.” ’880

patent at 4:30–36; ’537 patent at 4:31–39. But this reference falls far short of meeting the requirements of Section 112. Other than naming the two commands, no further description is provided; and of course, simply naming a command does not provide a person of ordinary skill in the art sufficient description to convey that the inventor was in possession of *that* command let alone the limitation as a whole. And there is no further description of how to selectively write a portion of a page from the first buffer to the volatile memory. Sechen Decl. ¶¶ 57, 63 (“A person of ordinary skill in the art may surmise that these commands relate to the reading and writing of data to/from a NVM but would not have understood from the mere recitation of names what was described here.”). As such, a person of ordinary skill in the art would not be able to determine that the patentee was in possession of this limitation.

Third, the specification fails to provide support for the claim limitation “to write said one or more changes from said second buffer to said volatile memory, thereby updating said one or more updated portions from said volatile memory to said first buffer, thereby updating said page stored therein to include said one or more changes associated with said one or more write requests.” ’880 patent at claim 1; *See also* ’880 patent at claims 4, 6; ’537 patent at claims 1, 7, 12. As above, there is no description in the patent that a person of ordinary skill in the art could rely on to find that the patentee had possession of a second buffer or moving a portion of a page. Sechen Decl. ¶ 64 (“[T]here is no description in the specification that illustrates how to write changes from the second buffer to the volatile memory. There are also no examples of how to write changes from the volatile memory to the first buffer.”). What’s more, the specification does not provide any support for the referenced “changes,” i.e. changes to a portion of a page. As with the earlier limitation, the specification’s passing reference to “new commands” does not demonstrate that a person of ordinary skill in the art was in possession of this portion of the

alleged invention. *Id.* ¶¶ 57, 64 (“[T]he ‘new commands’ that are merely named, ‘read byte out of page’ and ‘write byte out of page,’ fail to provide any description of how the system would carry out the apparent multiple steps contained in this element.”). And there is nothing else in the specification that a person of ordinary skill in the art would have understood to describe anything reasonably equivalent to this limitation. *Id.* ¶ 64.

* * *

The patentee’s failure to describe even one of these limitations would require a finding that the patent was invalid. Together, the patentee’s failure to describe three critical limitations reveals a much broader problem with the patents-in-suit: by stretching its claims to cover scope far removed from the original disclosure, the patentee has fundamentally failed to “convey[] to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date.” *Realtime Data, LLC v. Morgan Stanley*, 554 F. App’x 923, 937 (Fed. Cir. 2014) (affirming summary judgment of invalidity for lack of written description where patent “contain[ed] limited language and no descriptive content and hence fail[ed] to show that Realtime invented or had possession of content-based or content-dependent data decompression”); *see also Univ. of Rochester v. G.D. Searle & Co.*, 358 F.3d 916, 917 (Fed. Cir. 2004) (affirming summary judgment of no written description and noting that a “patent can be held invalid for failure to meet the written description requirement, based solely on the language of the patent specification,” because “[a]fter all, it is in the patent specification where the written description requirement must be met.”).

VI. CLAIM 1 OF THE ’880 PATENT IS INVALID AS INDEFINITE

While all asserted claims of the patents-in-suit are invalid for failure to comply with the written description requirement, Claim 1 of the ’880 patent violates Section 112 for the additional reason that it “fail[s] to inform, with reasonable certainty, those skilled in the art about

the scope of the invention.” *Nautilus*, 134 S. Ct. at 2124.

A. The Claim Limitation “thereby updating said one or more updated portions from said volatile memory to said first buffer” Is Indefinite

Term	Intel’s Construction	Flash-Control’s Construction
said system further adapted to write said one or more changes from said second buffer to said volatile memory, thereby updating said one or more updated portions from said volatile memory to said first buffer , thereby updating said page stored therein to include said one or more changes associated with said one or more write request	indefinite	plain and ordinary meaning

The claim, as published, is indefinite because it fails to functionally describe how the first buffer is updated. The limitation contains two distinct parts. *First*, the limitation requires the system to be able to write the change to a portion of a page from the second buffer to volatile memory. ’880 patent at 5:18–20. *Second*, the limitation states that the first buffer is “thereby update[d].” *Id.* at 5:20–24. The problem is that, while the patent informs the public how the volatile memory is updated, it omits key language that discloses to the public *how* the first buffer is subsequently updated. For example, a person of ordinary skill in the art would not be able tell which of the multiple changes referred to at the beginning of the limitation, “said one or more changes,” are written from the volatile memory to the first buffer. Sechen Decl. ¶¶ 66–67. This omission creates a zone of uncertainty around the claim limitation.

One need not look further than a comparison between claim 1 of the ’880 patent and the corresponding claim 1 of the ’537 patent to see the critical omission:

’880 Patent	’537 Patent
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said system <u>further adapted to write said one or more changes from said second buffer to said volatile memory,</u>	said system <u>further adapted to write said one or more changes from said second buffer to said volatile memory, thereby updating said one or more portions associated with said one or more write requests to include said one or more changes; and</u>
thereby updating <u>said one or more updated portions from said volatile memory to said first buffer, thereby updating said page stored therein to include said one or more changes associated with said one or more write requests</u>	said system further adapted to write <u>said one or more updated portions from said volatile memory to said first buffer, thereby updating said page stored therein to include said one or more changes associated with said one or more write requests.</u>

Compare Claim 1 of the '880 patent with Claim 1 of the '537 patent. Claim 1 of the '537 patent specifically discloses *how and with what* the first buffer is updated: “write said one or more updated portions from said volatile memory to said first buffer.” '537 patent at 5:26–30. Claim 1 of the '880 limitation omits this functional description. Instead, the '880 patent simply states “thereby updating said one or more updated portions from said volatile memory to said first buffer.” '880 patent at 5:20–24.

Without instructions on how the first buffer is updated, a person of ordinary skill in the art cannot determine the claim's scope. Sechen Decl. ¶¶ 66–67. Indeed, a person of ordinary skill in the art would know that there are multiple possible ways this step could be carried out. In one potential interpretation of the as-issued claim, this limitation could require that all of the changes that were written to the volatile memory in the prior step be written to the first buffer. In another interpretation, all of those changes as well as additional information stored in the volatile memory is written to the first buffer. And in yet a third interpretation, only a subsection of the changes might be moved—requiring a selective write operation. *Id.* ¶ 67 (describing each of the possible interpretations of this element). A definite claim cannot leave the public in the dark as to whether the claimed data write is of the entire page, less than the entire page, or the page and

more. *Honeywell Int’l Inc. v. ICM Controls Corp.*, 45 F. Supp. 3d 969, 985 (D. Minn. 2014) (finding the claim invalid where “two options entail differing limitations for the claim, the missing language in claim 1 results in a lack of reasonable certainty as to its scope.”); *H-W Tech., L.C. v. Overstock.com, Inc.*, 758 F.3d 1329, 1332-34 (Fed. Cir. 2014) (affirming motion for summary judgment finding claim invalid for indefiniteness where a material limitation was omitted and the omission was not evident on the face of the patent because “[t]o hold otherwise would potentially permit patentees to assert claims that they never asked for nor rightly attained.”).

The uncertainty as to the scope of the claim is exacerbated by the fact that the limitation “said one or more updated portions” is missing an antecedent basis. A claim is indefinite if a term lacks an antecedent basis both implicitly and explicitly. *See Cellular Commc’ns Equip. LLC v. AT&T, Inc.*, No. 2:15-CV-576-RWS-RSP, 2016 WL 7364266, at *8 (E.D. Tex. Dec. 19, 2016) (finding the term “the apparatus” indefinite because the claims did not specify whether “the apparatus” was an apparatus that was performing the recited method); *Smith v. ORBCOMM, Inc.*, No. 2:14-CV-666, 2015 WL 5302815, at *12 (E.D. Tex. Sept. 10, 2015) (finding the term “said inputs to be controlled” indefinite because it lacked an antecedent basis due to a drafting error and further declining to correct the error because it was not evident from the face of the specification or the claims). Here, the term “said one or more updated portions” has no antecedent basis because there is no prior identification of the “updated portions.” Sechen Decl. ¶ 68.

Importantly, nothing in the intrinsic evidence rescues this claim from a determination of indefiniteness as a matter of law. As established in Section V above, the specification lacks any description of moving or modifying a portion of a page, and thus cannot fill the gap in claim 1.

Likewise, the file history confirms this claim issued with a missing limitation, but cannot be relied upon to correct the claim.⁵ Sechen Decl. ¶ 70.

VII. CONCLUSION

For the foregoing reasons, Intel respectfully requests that the Court find U.S. Patent No. 8,531,880 and U.S. patent No. 8,817,537 invalid for lacking written description. Intel additionally requests that the Court find claim 1 of U.S. Patent No. 8,531,880 invalid as indefinite.

Dated: February 5, 2020

Respectfully submitted,

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⁵ “It is beyond this Court’s authority to insert the missing language, because the existence and substance of the omitted language is manifestly not evident from the face of the patent.” *See Levitation Arts, Inc. v. Fascinations Toys & Gifts, Inc.*, No. A-07-CA-990-SS, 2008 WL 11334126, at *2 (W.D. Tex. Apr. 15, 2008). Here, there is no evidence that the omitted language is obvious from the four corners of the patent. In fact, the patentee and Flash-Control’s own actions evidence that it is not. Notably, the patentee did not file for a Certificate of Correction when (1) the patent issued, (2) during the over six years since the patent issued, (3) when Flash-Control conducted the necessary due diligence to bring this lawsuit and serve infringement contentions, or (4) as a result of Flash-Control’s investigation related to this Court’s claim construction disclosures.

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CERTIFICATE OF SERVICE

I hereby certify that all counsel of record who are deemed to have consented to electronic service are being served with a copy of the foregoing document via the Court's CM/ECF system per Local Civil Rule CV-5(b)(1) on February 5, 2020.

/s/ J. Stephen Ravel

J. Stephen Ravel